

CONSTRUCTION STANDARDS FOR

• EST. 1803 •



Sister City to Newburgh, England

STREETS, CURBS AND SIDEWALKS

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Prepared By

**COMMONWEALTHTM
ENGINEERS, INC.**

TABLE OF CONTENTS

<u>Section</u>	<u>Description</u>	<u>Page</u>
1.0	Design Requirement _____	1
2.0	General Standards _____	2 – 9
3.0	General Requirements and Minimum Design Requirements _____	10 – 18
4.0	Acceptable Materials _____	19
5.0	Execution _____	20 – 23
6.0	Testing and Final Acceptance _____	24
7.0	Safety and Environmental Protection _____	25 – 28
8.0	Standard Drawings _____	8-1 to 10
9.0	Appendix	
	<ul style="list-style-type: none">• General Guide on Trip End Generation• NOI Stormwater Runoff Association with Construction• Right-of-Way Encroachment and Street Cut Permit Specifications	

SECTION 1

DESIGN REQUIREMENTS

1.0 DESIGN REQUIREMENTS

1.1 General Plan Requirements

- A. The design of all streets, curbs, and sidewalk improvements shall meet the criteria specified in these standards, those listed in the cited specifications, and the standards of ordinances relating to the Department of Storm Water Management. Referenced specifications are to be the most current edition of such specifications and include the Indiana Department of Transportation (INDOT) Standard Specifications and American Association of State Highway & Transportation Officials (AASHTO) Standards.
- B. Assess management to subdivisions shall follow criteria established by the Evansville Urban Transportation Study (EUTS), Access Standards Manual (current edition).
- C. The minimum amount of information to be included on the street plans is as follows:
 - 1. Cover sheet with name of project, vicinity map, and signature block for the Town Officials and Engineer
 - 2. Plan and profile sheets with 1 inch = 50 ft. horizontal and 1 inch = 5 ft. vertical scale (maximum acceptable scale).
 - 3. All Structures to be labeled on plan sheet or noted in a structure table.
 - 4. All Site features (road width, sidewalks, existing and proposed utilities and drainage facilities, etc.) shall be shown on the plans.
 - 5. All conflicting utilities shall be shown on the road profile sheet.
 - 6. Sheet size shall not exceed 24 inches x 36 inches.
 - 7. North arrow and scale noted.
 - 8. Proposed street grades and elevations.
 - 9. Grading plan for all cul-de-sacs.
 - 10. Bench mark information.
 - 11. All horizontal and vertical curve data.
 - 12. All drainage facilities and sanitary sewers shown on a utility plan.
 - 13. Typical sections.
 - 14. All necessary details (catch basins, curbs, etc.). Standard details found in Section 8 shall be utilized on the construction engineering plans where applicable.
 - 15. Construction notes.

1.2 Street Plan Certification

- A. All street plans must be prepared and certified by a civil engineer or land surveyor regularly engaged in the design of streets and storm drainage facilities. The civil engineer or land surveyor must be currently registered to practice in the State of Indiana.

END OF SECTION

SECTION 2

GENERAL STANDARDS

2.0 GENERAL STANDARDS

- A. These standards are established under the authority of the Town of Newburgh, Indiana, which is empowered by statute and ordinance to set standards for public improvements under its respective jurisdiction. These standards are to be used by all persons, firms, or corporations constructing improvements that are or may become public facilities under the jurisdiction of the Town of Newburgh.
- B. It is the policy of the Town of Newburgh that the design plans of any street within a public right-of-way be reviewed and approved prior to the start of construction. This review and approval will be done for all streets.
- C. No street, curb or sidewalk shall be built within public right-of-way in the Town of Newburgh unless plans for the same have been reviewed and approved by the appropriate agencies of Town government. These general standards apply unless a variance is granted by the appropriate agency. The Town's Engineer shall review all such plans for the Town Council, Plan Commission and the Department of Storm Water Management.
- D. The Town of Newburgh is responsible for the maintenance of all streets and drainage structures accepted into the highway system in their jurisdiction. As a result, it is necessary to establish minimum standards for the design and construction of all street and drainage improvements so that unnecessary maintenance costs will not be incurred by the Town and unnecessary inconveniences to citizens and businesses can be avoided.
- E. The standards set forth herein are intended to be minimum standards. The minimum standards are only intended as a point of reference. Each design situation will be evaluated on its own unique set of circumstances and planned accordingly. The Town Engineer and the review staff may recommend improvements that exceed these minimum requirements. Variations from these standards may be considered by the Town Council upon written application citing unusual conditions justifying changes based upon sound engineering practices and principles.
- F. Erosion control and sediment plans shall be submitted to and approved by the Newburgh Storm Water Management Board. All requirements of the plan shall follow the guidelines established by the Indiana Department of Environmental Management, Rule 5. Refer to the Newburgh Drainage Standards for further explanation of the plan.
- G. The Engineer shall be at the site to perform periodic site inspections and document the status of the progress being made on the site. 48 hours notice shall be given to the Engineer prior to beginning any phase of construction. Failure to notify the Engineer of work being performed at the site may result in non-acceptance of the work performed.
- H.. It shall be the responsibility of the developer to submit proposed street names. The Newburgh Plan Commission by virtue of signing the

approved plat for a subdivision, will approve street name. The Newburgh Plan Commission has the authority to reject inappropriate or conflicting street names. It shall be the responsibility of the developer to purchase, install and maintain all street name signs until such time the roadway is accepted by the Town. Street signs shall be installed prior to opening the traveled way to the public.

Warning and regulatory signs shall be installed according to an approved signing and striping plan. All signs shall be as specified by the Indiana Manual on Uniform Traffic Control. The Plan shall be approved by the Town Engineer prior to installation. It shall be the responsibility of the developer to purchase, install and maintain all warning and regulatory signs until such time that the roadway is accepted by the Town.

Installation shall be in accordance with INDOT standards. All sign hardware shall meet or exceed INDOT specifications.

2.1 DEFINITIONS

- A. Unless otherwise expressly stated, the following words shall, for the purpose of these standards, have the meaning herein indicated. Any pertinent word or term not a part of this listing but vital to the interpretation of this document shall be construed to have its usual legal meaning. Words used in the present tense include the future, the singular includes the plural, and the plural the singular. The word 'lot' includes the word plat. The word 'used' includes "designed" or "intended" to be used. The word "shall" is a mandatory requirement, the word "may" is a permissive requirement and the word "should" is a preferred requirement.
- **ABUTTING PROPERTY OWNERS** . means official owners of record, whose property is contiguous to the subject property or any property which would touch, at any point, the subject property ignoring all rights-of-way, easements, alleys, and the like.
 - **ACCESS** . means the way over which traffic moves to or from the property abutting a street or alley and the way over which traffic moves to or from an arterial street to a collector street or from a street to an alley.
 - **ALLEY** . means a permanent public service right-of-way as secondary access to the side or rear of those properties when principal frontage is on some other right-of-way and is not intended for general traffic.
 - **AREA** . means the total area within the lot lines.
 - **BASIC IMPROVEMENTS** . means the installation of storm sewers, sanitary sewers, water supply lines, streets, curbs, gutters, and walks
 - **BLOCK** . means a tract of land bounded on all sides by streets, or a combination of streets and public parks, cemeteries, railroad rights-of-way, etc., or a combination thereof, whether partially or wholly occupied by buildings or containing only vacant lots.

- **BOND** . means any form of security including a surety bond or letter of credit in an amount and form satisfactory to the Plan Commission or appropriate delegate.
- **BUILDING** . means a structure having a roof supported by columns or walls, used or intended to be used, for the shelter or enclosure of persons, animals, or property.
- **BUILDING SETBACK LINES** . means the lines indicating the minimum horizontal distance between the right-of-way of any street and the foundation of any building nearest the right-of-way of any street.
- **COMMISSION** . means the Plan Commission of Newburgh, Indiana.
- **COMPREHENSIVE PLAN** . means the complete plan as amended, or any of its parts, for the development of the Town, prepared by the Newburgh Plan Commission and adopted in accordance with IC 36-74-101, et.seq.
- **CUL-DE-SAC** . means a local street with only one (1) outlet having an appropriate terminal for the safe and convenient reversal of traffic movement.
- **EASEMENT** . means an authorization or grant by a property owner to specific persons or to the public to use land for specific purposes.
- **FLOOD PLAIN** . means the relatively flat area or low land adjoining the channel of a river or stream that has been or may be covered by floodwater as defined by FEMA. The flood plain includes the channel, floodway, and floodway fringe.
- **HAMMERHEAD** – means a local street with only (1) outlet having a terminal end that allows for traffic to turn around. The use of this type of design is restricted and consideration of the design will be allowed on a case by case basis.
- **IMPROVEMENTS** . means the installation of storm sewers, sanitary sewers, water supply lines, streets, curbs, gutters, gas lines, electrical lines, telephone lines, water lines, and sidewalks.
- **INTERESTED PARTIES** . means those parties who are the owners of properties adjoining or abutting the proposed subdivision as shown on the plat.
- **LEGAL DRAIN** . means an open ditch or a tiled ditch, or a combination of the two (2), which is subject to the jurisdiction and control of the Town of Newburgh.
- **LEGISLATIVE BODY** . means the Town Council of Newburgh, Indiana.

- **LOCATION MAP** .means a small inset map showing the location of a tract of land in relation to a larger area.
- **LOT** .means the tract of land within a subdivision marked by the subdivider on the plat as a numbered, lettered or other identified tract of land to be offered for sale, dedication or development, which is an identifiable parcel of land having frontage on a public street or right-of-way.
- **CORNER LOT** .means a lot located at the intersection of two (2) or more streets, the interior angle of such intersections not exceeding 135 degrees.
- **DOUBLE FRONTAGE LOTS** .means a lot other than a corner lot with frontage on more than one street or through lots abutting two (2) streets.
- **PARCELIZATION** .means a division of land into two (2) or more lots, each lot with area greater than five (5) acres, and not involving any new street or other means of access.
- **PLANNED UNIT DEVELOPMENT .PUD** .means a subdivision designed for residential, commercial, industrial use or a combination for the purpose of selling or leasing individual lots.
- **PLAT** .means a map, drawing or chart upon which the subdivider's plan of the subdivision is presented and which is submitted for approval with intent to record in final form.
- **PRIMARY APPROVAL** .means approval (or approved with conditions imposed) granted to a subdivision by the Plan Commission after having determined in a public hearing that the subdivision complies with this ordinance
- **PRIMARY CHECKLIST** means a document provided by the Plan Commission staff which is necessary for the application for primary approval.
- **REGULATORY FLOOD** .means the flood having a peak discharge, which can be expected to be equaled or exceeded on the average of once in a one hundred (100) year period. This flood is equivalent to a flood having a probability of occurrence of one percent (1%) in any given year and is defined by FEMA.
- **REPLAT** .means a change in a recorded subdivision plat if such change affects any street layout on such. plat, or area reserved thereon for public use, or any lot line, except as otherwise exempted in this ordinance.
- **RIGHT-OF-WAY** .means a strip of land occupied or intended to be occupied by transportation facilities, public utilities, or other special public uses. Rights-of-way intended for any use involving maintenance by a public agency shall be dedicated to the public use by the maker of the plat on which such right-of-way is established.

- **SECONDARY APPROVAL** means approval insuring that the plat reflects all terms, conditions, and commitments given by the subdivider or required by the Plan Commission at the hearing for primary approval.
- **SECONDARY CHECKLIST** means a document provided by the Plan Commission staff which is necessary for application for secondary approval.
- **STREET** means a thoroughfare within the right-of-way which affords the principal means of access to abutting property. A street may be designated an avenue, boulevard, drive, highway, land, parkway, place, road, court, or appropriate name. Streets are identified according to type of use, as follows:

ARTERIAL STREET - means a street which serves the major movement of traffic within or through a metropolitan area.

COLLECTOR STREET - means a street serving internal traffic movement and providing access to arterial streets. For the purposes of these standards, any roadway with projected trip end generation over 1000 shall be considered a collector roadway.

LOCAL STREET - means a street whose primary function is to provide access to immediately adjacent lands. It generally serves the residential and minor commercial areas of the community. For the purposes of these standards, any street with projected trip end generation from 60 to 999 shall be considered a local street.

CONTROLLED ACCESS STREET - means a road partially controlled by public authority.

FULLY CONTROLLED - means a street where preference to through traffic is given by providing access connections with selected public roads only and by prohibiting crossings at grade.

PARTIALLY CONTROLLED - means a street where preference to through traffic is given, in addition to providing access connections with some crossings at grade.

HALF STREET - means a part of a street, which is approximately equal to the remainder.

INTERIOR LOTS - means a lot with only one frontage on a street.

PARTIAL STREET - means a street, which is, or will become, a part of a whole or complete street.

PRIVATE STREET - means a local street that is not dedicated or accepted for public use or maintenance, which provides vehicle and pedestrian access.

PUBLIC STREET - means a street dedicated, owned, and maintained by a public entity for the purpose of vehicle and pedestrian access.

ACCELERATION LANE - means an auxiliary lane constructed as part of the driveway which enables egressing vehicles to increase speed prior to entering the through traffic stream.

DECELERATION LANE - means an auxiliary lane constructed as part of the driveway which is used by ingressing vehicles to reduce speed prior to entering a site. The lane may also provide some deceleration vehicle storage.

FRONTAGE ROAD - means a through road auxiliary to and located adjacent to a public road for service to abutting property.

PASSING BLISTER - means an auxiliary lane constructed opposite of the driveway that enables through traffic to maneuver around vehicles turning left into a site.

- **SUBDIVIDER** means the person or persons who own all or any part of the real estate included within the plat at the time of the secondary approval of said plat.
- **SUBDIVISION** means any land, vacant or improved, which is divided or proposed to be divided into two (2) or more lots, parcels, sites, units, plats, or interest for the purpose of offer, sale, lease, or development. Subdivision includes the division or development of residentially and non-residentially zoned land, whether by deed, metes and bounds description, or other recorded instruments.
- **MAJOR SUBDIVISION** means all subdivisions not classified as minor subdivisions including, but not limited to, subdivisions of three (3) or more lots, or any size subdivision requiring any new street, or extension of local governmental facilities, or the creation of any public improvements.
- **MINOR SUBDIVISION** means any subdivision containing not more than two (2) lots fronting on, or having access to, an existing street, not including creating any new street or road, or the extension of municipal facilities, or the creation of any public improvements, and not adversely affecting the remainder of the parcel for adjoining property, and not in conflict with any provision or portion of the Comprehensive plan, Thoroughfare Plan, Zoning Ordinance, or these regulations.
- **NONRESIDENTIAL SUBDIVISION** means a subdivision in which the intended use is other than residential, such as commercial or industrial.
- **SUBDIVISION REVIEW COMMITTEE** means a technical review committee established by the Plan Commission which may be appointed by the Plan Commission to assist with the technical evaluation of subdivisions and to make recommendations to the Plan Commission.
- **THOROUGHFARE PLAN** means a plan and maps established by the

Town Council of the Town of Newburgh, Indiana pursuant to law as a portion of the Comprehensive Plan, showing the location of streets and roads, functionally classified public facilities, utilities, and describing future infrastructure. The plan is approved, adopted, and established by law, and any amendments or additions including those resulting from filing and approval of subdivision plats, are adopted by the Town Council of the Town of Newburgh, Indiana as a continuous updating of the plan.

2.2 Interpretations

- A. The Town Engineer shall decide all questions arising from interpretation of these standards, and all questions arising from interpretation of plans and specifications relating to work on public improvements. The Engineer shall decide all questions that may arise as to the quality and acceptability of materials to be furnished and work performed, and as to the methods used in performance of the work. Interpretations of the Engineer may be appealed to the Town of Newburgh in writing.

2.2 Responsibilities of the Developer

- A. The Developer shall perform and complete the work in accordance with these standards, the approved plans and specifications, and to the satisfaction of the Engineer. The Developer shall conduct his work so as to minimize interference with public and private business and traffic. The developer may be required to provide, at his own expense, barricades, fences, flagmen, flashing lights, signs, temporary utilities or other precautions as may be necessary to protect life, property, adjacent buildings and structures.
- B. Traffic control devices shall conform to the standards required by the Indiana Manual on Uniform Traffic Control Devices (Current Edition).
- C. The Developer shall be liable for all damages and injuries sustained or received by any person, persons or property in consequence of any neglect in safeguarding the work, or by any act of neglect or misconduct by the Developer or his agents, subcontractors or employees.
- D. Developers and/or contractors performing work upon public ways shall be bonded with the Town of Newburgh, and shall provide proof of insurance coverage in amounts as specified by the Town of Newburgh. The bond shall cover 100 percent of the estimated cost of the work. Determination of the cost shall be determined by the developer's engineer. The estimate shall be approved by the Town Engineer, in writing, prior to bonding.
- E. Failure to furnish or supply any required information or service related to roads, stormwater, or sidewalks will result in the Town of Newburgh providing for those deficiencies and billing the Owner/Developer. Failure to pay these charges or any other obligations on the part of the Owner/Developer could result in a claim on the posted bond and or discontinuation of building permits for the subdivision.

2.3 Final Inspections

- A. In addition to periodic inspections, which may be conducted during the construction of development improvements, the Town Engineer will conduct a final inspection. The Town shall conduct the final inspection prior to acceptance of any unit for maintenance. Any deficiencies indicated on the final punch list shall be completed prior to the Town taking the facilities for maintenance. The developer shall, at the request of the engineer, provide personnel to aid in the final inspection.
- B. Upon completion and acceptance, all roadway and drainage improvements within the development shall be dedicated to the Town. Any improvements constructed within private easements, shall be the responsibility of the private lot owner or the homeowners association if any. All sidewalks constructed within the right-of-way and adjacent to individual lots shall be the responsibility of the lot owner.

END OF SECTION

SECTION 3

GENERAL REQUIREMENTS AND MINIMUM DESIGN CRITERIA

3.0 GENERAL REQUIREMENTS AND MINIMUM DESIGN CRITERIA

3.1 Streets

- A. Conformity to Master Plan. All streets, curbs and sidewalks shall conform in general alignment, character, extent, and width to the Town of Newburgh Master Plan.
- B. Location and Arrangement.
 - 1. The “General Guide on Trip Generation Rates by Land Use” found in the appendix shall govern in the determination of road classifications.
 - a. Local Streets shall be designed to discourage rapid, through traffic movements and any projected reasonable extension of such proposed street shall be taken into consideration in deciding if the street shall be classified as a local street.
 - b. Collector roadways, while providing access to abutting land parcels, shall also enable moderate quantities of traffic to move expeditiously between local streets and major street networks.
 - c. Arterial Road shall be designed to provide major movement of traffic within and through a metropolitan area.
 - 2. A proposed street layout shall provide for the continuation or projection of existing streets in the surrounding area unless such extension is undesirable because of topography or design.
 - 3. When it is desirable to provide street access to adjoining property, proposed streets shall be extended by dedication to the boundary of such property.
 - 4. When a residential subdivision abuts or contains an existing or proposed arterial, major or secondary roadway (double frontage lots), the plan shall show provisions for reverse frontage screening (planting shrubbery, evergreens, trees and/or earthen berms) contained in a non-accessible reservation along the rear property line. Other treatments necessary for adequate protection of residential properties shall be considered.
 - 5. When a subdivision borders on or contains a railroad right-of-way or limited access highway right-of-way, a frontage collector roadway, parallel and adjacent to said right-of-way, may be required.

C. Minimum Right-of-Way Widths.

1. All street rights-of-way, measured from lot line to lot line shall be a minimum of:

<u>Arterial</u>	<u>80 feet</u>
<u>Collector Roadway</u>	<u>60 feet</u>
<u>Local Streets</u>	<u>60 feet</u>
<u>Alleys (Residential)</u>	<u>12 feet</u>
<u>Alleys (Commercial)</u>	<u>20 feet</u>

Topography may dictate widths that exceed the minimum width required. In rolling to hilly terrain, tops of banks and toes of slopes will govern the right-of-way width. In flat terrain, tops of banks of side ditches will govern right-of-way width. The right-of-way width shall be uniform throughout a section of roadway from intersection to intersection wherever possible.

2. Subdivisions platted along both sides of an existing street shall provide the entire right-of-way required.
3. Subdivisions platted along only one side of an existing street shall provide one-half of the right-of-way required measured from the centerline of such existing streets.
4. Half streets are prohibited. Whenever a half street exists adjacent to a tract to be subdivided, the other half of the street shall be platted within such tract.

D. Intersections.

1. Streets shall intersect one another as nearly as possible at right angles and in no case shall the angle of intersection be less than seventy (70) degrees.
2. Property lines at street and alley intersections shall be rounded with a radius of at least twenty (20) feet. In commercial districts a comparable chord may be used in place of an arc.
3. Street jogs with centerline offsets of less than one hundred

twenty-five (125) feet are prohibited.

4. Intersections involving the junction of more than two (2) streets are prohibited.
5. Intersections shall be designed with a flat grade wherever practical. In hilly or rolling terrain, at the approach to an intersection, a leveling area shall be provided having not greater than two percent (2%) rate at a distance of 50 feet, measured from the nearest right-of-way line intersecting the street.

E. Street Grades.

1. Street grades, except under extreme physical conditions, shall not exceed the following:

<u>Street Type</u>	<u>Per Cent Grade</u>
<u>Collector Roadway</u>	<u>7.0%</u>
<u>Local Streets</u>	<u>9.0%</u>
<u>Alleys (Commercial)</u>	<u>9.0%</u>
<u>Alleys (Residential)</u>	<u>15.0%</u>

2. For adequate drainage, the minimum street grade shall be not less than one-half of one (0.5) percent. No deviation from this minimum requirement will be allowed.

F. Street Alignment.

1. A tangent at least one hundred (100) feet long shall be introduced between reverse curves. Arterial and Collector Roadways shall be designed following minimum ASSHTO standards.
2. Two curves in the same direction connected with a short tangent and known as broken back curves, shall be combined into one continuous curve.
3. If a deflection angle of more than five (5) degrees in the alignment of a street occurs, a curve with the following minimum radius shall be provided.

<u>Street Type</u>	<u>Min. Radius of Curvature</u>
<u>Collector Roadway</u>	<u>250 feet</u>
<u>Local Streets</u>	<u>100 feet</u>
<u>Alleys</u>	<u>100 feet</u>

4. Minimum intersection sight distance for passenger cars entering a two lane roadway are given as follows:

<u>Street Type</u>	<u>Minimum Sight Distance</u>	
	<u>Right Turn</u>	<u>Left Turn</u>
<u>Collector Roadways</u>	<u>700</u>	<u>800</u>
<u>Local Street</u>	<u>300</u>	<u>350</u>
<u>Alley</u>	<u>225</u>	<u>275</u>

- Notes: 1. Eye height of the driver shall be 3.5 feet above the pavement edge.
2. The drive shall be positioned 10 feet from the edge of the pavement.
3. Object height (approaching vehicle) shall be 4.25 feet above the center of the roadway.

5. Minimum Stopping Distance Sight Distance shall be used where the visual obstructions and/or variations in the vertical and horizontal alignment of the adjoining roadway may physically limit the obtainable intersection sight distance.

<u>Street Type</u>	<u>Stopping Sight Distance</u>
<u>Collector Roadways</u>	<u>400 feet</u>
<u>Local Streets</u>	<u>250 feet</u>
<u>Alleys</u>	<u>125 feet</u>

G. Dead-End Streets.

1. Dead—end streets, designed to be permanently dead-end, shall not be longer than six hundred (1200) feet from the nearest intersecting street, and shall be provided at the closed end with a cul-de-sac having a radius at the outside of the pavement of at least forty (40) feet in residential

developments and fifty (50) feet in commercial and industrial developments.

2. Hammerhead Turnarounds – Cul-de-sac turnarounds are preferred but the use of hammerhead turnarounds is allowed under certain conditions. For this design to be acceptable, the plan must be presented to the Plan Commission. The Plan Commission will analysis the appropriateness of the design and make a recommendation to the Town Council. The Council will have the final decision on approval of this type of design.

H. Reserve Strips and Private Streets.

1. Reserve strips controlling access to streets are prohibited unless control is placed in the Town under conditions approved by the Plan Commission and Town Council.
2. Private streets shall not be platted within a subdivision.

I. Street Names and House Numbers.

1. As stated in the Newburgh Subdivision Control Ordinance.

J. Driveway Approaches

1. Concrete driveway approaches shall be constructed of 6 inches of concrete for residential drives within the road right-of-way. The subgrade preparation and placement of concrete shall be the same as that for local streets. Sidewalks extending across driveways shall be the same thickness as the driveway.
2. Concrete driveway approaches shall be constructed of 7 inches of concrete for commercial drives within the road right-of-way. The subgrade preparation and placement of concrete shall be the same as that for collector streets. Sidewalks extending across driveways shall be the same thickness as the driveway.

3.2 Alleys

- A. Unless provision for adequate service access is made, alleys shall be provided in commercial and industrial districts. An alley, planned for use in commercial or industrial developments, shall not be for the use of the general public. Alleyways for access to rear garages in residential areas are permitted. Residential alleyways shall be designed to discourage cut through use and designed for the sole use of residents immediately adjacent to the alleyway.
- B. The minimum right-of-way width of an alley shall be twenty (20) feet

in industrial and commercial areas. A (12) foot minimum width is required in all other areas.

- C. Dead-end alleys should be avoided, but if unavoidable, shall be provided with an adequate circular, “T” or “Y” turn—around at the closed end.

3.3 Easements

- A. Easements adjacent to street lines shall be provided where necessary for utilities and shall be at least twelve (12) feet wide. The location and width of easements shall be determined in conjunction with the appropriate utility.

3.4 Monuments and Markers

- A. Monuments and markers shall be constructed as stated in the Newburgh Subdivision Ordinance.
- B. At the intersection of street and alley right-of-way lines.
- C. At the beginning and ending of all street curves on both right-of-way lines.

3.5 Streets

- A. Streets and alleys shall be graded to the full width of the right-of-way and brought to grades specified on plans, profiles, and cross-sections.
- B. Streets shall be paved to the following minimum widths from back of curb to back of curb (back of pavement to back of pavement w/o curbs):

Street Type	Width
<u>Collector Roadways</u>	36'
<u>Local Roadways</u>	30'
<u>Commercial Alley</u>	12'
<u>Residential Alley</u>	8.5'

- C. Street and alleys shall be constructed with materials consistent with the following minimum design criteria:

<u>Flexible Paving Material</u>	<u>Collector Roads</u>	<u>Local Streets & Alleys</u>
Surface	1" of #11 hot asphalt	1" of #11 hot asphalt
Binder	-0-	-0-
Base	4" of #5 hot asphalt	3" of #5 hot asphalt
Sub-base	8" of #53 crushed stone	6" of #53 crushed stone
<u>Portland Cement Concrete</u>		
Uniform Design		
Thickness	7" 3500 psi 6	6" 3500 psi
Sub-base	6" of #53 crushed stone	4" of #53 crushed stone

D. When Alleys serve commercial or industrial development, the Collector Road specifications shall be required.

3.6 Curbs and Gutters

- A. Curbs and gutters shall be installed along all streets. Curbs shall be constructed as shown on the standard details found in Section 8.
- B. All curbs and gutters shall be constructed of Portland cement concrete. The concrete shall have a minimum 28 day compressive strength of 3500 psi.
- C. The moistened subgrade upon which the curb and gutter is founded shall be compacted to the same density requirements as established for street subgrade.
- D. The side forms for the construction of curb and gutter shall be of wood or metal. The forms shall be straight, free of warp and of sufficient strength to resist the pressure of the concrete when staked. Staking shall be provided to ensure the rigidity of the form and to ensure true grades and straight lines. Curved forms shall be used on all curves.

- E. Slip form curbing is permitted provided that the template for the screed is the same as that detailed in the standards drawings. Variations from the dimensions outlined in the standards drawings shall be approved by the Engineer prior to installation.
- F. No curb and gutter shall be placed until the subgrade has been inspected and approved by the Town Engineer.
- G. Ramps for handicapped shall be included in the curb and gutter and sidewalk construction at all intersections and as stated by local, state and federal laws.
- H. An underdrain using perforated pipe, filter fabric and granular filter material shall be installed under all street curbs as generally shown on the details found in details 8-1 and 8-2. The installation shall conform to INDOT requirements for installation of underdrains (latest edition). All underdrains shall discharge directly into storm inlet boxes.

3.7 Sidewalks

- A. Sidewalks shall be installed along all streets. Curbs shall be constructed as shown on the standard details found in Section 8. Waiver of this requirement can be taken under consideration and a waiver of sidewalks obtained if Plan Commission recommends they not be installed and the Town Council concurs.

Sidewalks designated as future or proposed in the comprehensive Plan for the Town shall be constructed along with other basic improvements in the development.

Right-of-way or easement shall be dedicated for any sidewalk shown in the comprehensive plan.

- B. Concrete sidewalks, at least four (4) feet wide and four (4) inches thick, shall be installed on both sides of each newly constructed street. Sidewalks shall **not** have a cross slope of greater than 2% (1/4":1') and driveways shall be adjusted to match the cross slope of the sidewalk.
- C. The side forms for the construction of curb and gutter shall be of wood or metal. The forms shall be straight, free of warp and of sufficient strength to resist the pressure of the concrete when staked. Staking shall be provided to ensure the rigidity of the form and to ensure true grades and straight lines.
- D. The subgrade shall be moistened prior to placing the concrete. The concrete shall be struck off at the top of the forms. The concrete shall be

worked to bring the mortar to the surface. The surface shall then be made smooth and even by means of a wood float and struck off with a broom finish.

- E. Ramps for handicapped shall be included in the curb and gutter and sidewalk construction at all intersections and as stated by local, state and federal laws.
- F. Installation of asphalt for sidewalks is permitted. The construction of asphalt walks shall only be permitted when installing interconnections between subdivisions and trails as designated in the comprehensive plan. All other walks and trails in new developments shall be concrete as specified in section 5.11.

END OF SECTION

SECTION 4

ACCEPTABLE MATERIALS

4.0 ACCEPTABLE MATERIALS

4.1 Road Materials

- A. #53 Crushed Stone. #53 crushed stone shall conform to INDOT standard specifications for Type "0" mix.
- B. #5 Hot Asphaltic Concrete Base Material. #5 HAC base material and mix design shall conform to the INDOT standard specifications.
- C. #9 Hot Asphaltic Concrete Binder Material. #9 HAC binder material and mix design shall conform to INDOT standard specifications.
- D. #11 Hot Asphaltic Concrete Surface Material. #11 surface material and mix design shall conform to INDOT standard specifications.
- E. Bituminous Tack Material. Bituminous tack coat material shall conform to INDOT standard specifications for Type AET-90. Material application shall be at the rate of 0.04 to 0.06 gallons per square yard.
- F. Concrete for Streets, Curbs and Sidewalks. Concrete materials shall conform to INDOT standard specifications. The concrete coarse aggregate shall be limestone. The 28 day concrete strength shall exceed 3500 psi. Air entertainment admixtures meeting AASHTO or ASTM C-260 shall be used. The air content shall measure between 5 to 8 percent by volume of the concrete mixture as determined by ASTM C-23 1.
- G. Premolded Joint Material. Premolded joint material for expansion joints shall conform to the requirements of AASHTO M213. The joint material shall extend the full depth and width of the joint.
- H. Joint Filler. The joint filler for joints shall be equal to W.R. Meadows # 164 Hot-Pour Rubber-Asphalt Sealer or Crafcro Road Saver 211 Hot-Pour Rubber-Asphalt Sealer.
- I. Curing Compounds. The concrete field applied curing materials shall conform to INDOT standard specifications.
- J. Backfill Material. Granular trench backfill material B-borrow (sand) shall meet INDOT standard specifications. Stone bedding shall meet INDOT standard specifications.

END OF SECTION

SECTION 5

EXECUTION

5.0 EXECUTION

5.1 Trench Excavation

- A. Only one-half of street crossings and road crossings shall be excavated before placing temporary bridges over the side excavated for the convenience of the traveling public. All backfilled ditches shall be maintained in such a manner that they will offer no hazard to the passage of traffic. The convenience of the traveling public and property owners abutting shall be taken into consideration. All public or private drives shall be taken into consideration and shall be promptly backfilled or bridged. Excavated materials shall be disposed of so as to cause the least interference.

5.2 Pipe Bedding

If the natural base of the trench is not satisfactory as a bedding for the sewer pipe, one of the following methods shall be used:

- A. Rock Cut Bedding. If the foundation is in rock the excavation shall be undercut to a depth of four (4) inches below the bottom of the pipe. The pipe shall be laid on a bed of granular material to provide continuous support for the lower section of the pipe. Granular bedding shall be #5 or #7 stone.
- B. Special Subgrade Improvement. When required by the Town's Engineer, unsuitable materials below the normal subgrade depth shall be removed to a depth sufficient to provide a layer of limestone (#2 or #5) to support upper layers of the subgrade and prevent settlement and pumping. Prepare subgrade prior to placement of the sub-base. Failure to comply with these requirements will result in action by the Town Council.
- C. Dust and Erosion Control. The contractor shall provide sufficient dust control during the construction project. The contractor shall effectively control all site erosion. The contractor shall keep all dirt, mud and construction debris off of existing street pavements and out of drainage structures. See Section 7, Safety and Environmental Protection for specific requirements.

5.3 Premolded Joint Materials

- A. Premolded joint materials shall be constructed as directed in these specifications. The material shall extend the full width and depth of the joint. The material shall be held securely in place during the concrete placement.

5.4 Joint Filler

- A. The joint filler material shall be installed per the manufacture's recommendations. All concrete street pavement joints shall be filled with

the material. The joints shall be filled to within 1/8 inch of being level with the top of the pavement. Any spilled or sloppily applied material shall be cleaned at the contractor's expense. All joints shall be cleaned with compressed air prior to joint filler placement.

5.5 Curing Compounds

- A. The field applied curing compounds shall be applied per the manufacture's recommendations. The curing compound shall be applied after the concrete has reached its initial set.

5.6 Embankment and Subgrade Preparation

- A. The grading of the site shall conform to the grades shown on the plans.
1. Unsuitable excavation shall include any material containing vegetation or organic matter such as mulch, peat, organic silt or sod. The unsuitable material shall be cleared and grubbed within the limits of the right-of-way and stockpiled or removed from the site. Clearing and grubbing shall include the removal of any organic material that, in the opinion of the Engineer, must be removed to provide a stabile foundation for the subgrade.
 2. Compaction of pavement subgrade shall be at least 95 percent of the maximum dry density as determined by the standard proctor density test (AASHTO T-99).
 3. All subgrade fill material shall be mechanically compacted in six-inch lifts. Each lift shall be compacted to at least 95 percent of the maximum dry density as determined by the standard proctor density test (AASHTO T-99).
 4. The contractor or developer shall furnish the density test reports to the Engineer that indicates the degree of compaction for each lift placed.
 5. Testing shall be performed by and independent testing lab at the expense of the contractor. The soil being placed must be representative of the soil tested.
 6. Moisture contents of the compacted soil shall be within 4 percent of the optimum moisture content.
 7. Density test shall be required at 200 feet intervals along the roadway for each lift placed. Failures shall be excavated or disked, recompacted and retested prior to placing additional fill. The Engineer may request additional testing of areas suspect of non-compliance.
 8. The compaction limits shall extend out at a 2 horizontal to 1 vertical slope from the edge of the finished pavement and/or sidewalks.
 9. Special benching requirements may be necessary for embankment constructed on the sides of hills.

5.7 #53 Crushed Stone for Road Sub-base

- A. The placement of the #53 crushed stone sub-base material shall be to the lines, thicknesses and grade shown on the plans. The material shall be compacted mechanically to a density of 95 percent of standard proctor density.

5.8 #5 Hot Asphaltic Concrete Base Material

- A. The placement of the #5 HAC base material shall be to the lines, thickness, and grades shown on the plans. The material shall be rolled and compacted to a density of 110 pounds/square yard per inch thickness. All placement work shall conform to INDOT standard specifications.

5.9 #9 Hot Asphaltic Concrete Binder Material

- A. The placement of #9 HAC binder material shall be to the lines, thicknesses and grades shown on the plans. The material shall be rolled and compacted to a density of 110 pounds/square yard

5.10 #11 Hot Asphaltic Concrete Surface Material

- A. The placement of #11 HAC surface material shall be to the lines, thickness, and grades shown on the plans. The material shall be rolled and compacted to a density of 110 pounds/square yard per inch thickness. All placement work shall conform to INDOT standard specifications. The surface material shall not be placed until all development cleanup work has been completed.

5.11 Concrete Pavement, Curbs and Sidewalks

- A. The placement of all concrete shall be to the lines, thicknesses and grades shown on the plans. All concrete placement shall meet INDOT standard specifications. The subgrade shall be compacted and smooth. The subgrade surface shall be water moistened prior to placement of the concrete. The concrete shall have a minimum 28 day compressive strength of 3500 psi. The concrete slump shall not exceed 4 inches. The concrete may be placed by hand or machine.
- B. Joints shall be placed as shown on the drawings. The contractor shall replace all concrete sections which crack before joint placement, or which tear due to low slump concrete.
- C. A broom finish shall be used on all exposed surfaces. Curing compounds shall be placed per the manufacturer's recommendations upon initial concrete set.
- D. No concrete shall be placed if the air temperature is not above 40 degrees F and rising.

The contractor is responsible for all weather related damage done to the concrete placed.

SECTION 6

TESTING AND FINAL ACCEPTANCE

SECTION 7

SITE SAFETY
AND
ENVIRONMENTAL PROTECTION

7.00 SITE SAFETY AND ENVIRONMENTAL PROTECTION

- A. Neither the Town or its Engineer or agents are responsible for safety on the job site. All codes, statutes and regulations relating to safety on the job site shall be followed by the owner, developer and contractor. Directions by the Engineer, and inspections by the Engineer, are not designed to assure safety on the job, only that the work is built according to the standards and the drawings. The contractor constructing the work shall advise each of its employees that the Town and the Engineer are not responsible for safety on the site.
- B. The Contractor shall provide sufficient dust control during the construction project. The Contractor shall effectively control all site erosion. The contractor shall keep all dirt, mud and construction debris off of existing street pavements and out of drainage structures.
- C. Burning felled trees and brush at the site is prohibited except when permitted by the Indiana Department of Environmental Management (IDEM) and with permission from the Town Council. Burying felled trees and other material at the site is prohibited.
- D. No petroleum products from construction equipment are permitted to be discharged directly on the ground.
- E. EROSION CONTROL

1.01 General

This section provides the general guidelines for the control of erosion and sediment for construction sites. Control of sedimentation for construction site may be accomplished through utilization of a variety of control practices. The complexity of the erosion and sediment control plan will vary depending upon individual site conditions. The goal of such a plan is to limit the quantity of sediment leaving the construction site. The Contractor's plan must be approved by the Town.

In addition, the Contractor must also comply with Rule (5 327 IAC 15-5) for land alteration which disturbs 1 acre or more.

1.02 Permitting Requirements

If the Owner/Contractor is required to submit a soil erosion control plan to the State under Rule 5 (327 IAC 15-5), such plan shall be deemed in compliance with Town requirements. In this case all applicable State and Federal permits or notices for land disturbing activities shall be obtained or filed prior to beginning land disturbing activities. Copies of all applications, letter of intent, submittals, plans and other erosion and sediment control related information shall be submitted to the Town.

In general, preparation an erosion control shall be submitted to and approved by review agency. After receipt of the review approval or 28 days, which ever comes first, the applicant can submit a Notice of Intent (NOI) (sample found in appendix) to IDEM and copy the review agency. The NOI must be submitted 48 hours prior to the start of construction. Therefore, 30 days must pass from the first submittal date to the start of construction. The verification of reviewing agency acceptance of the erosion control plan must be submitted to IDEM. Proof of publication in a local newspaper (sample found in appendix) intended to notify the public that the construction activity is to commence and a \$100 fee to IDEM is also required. Throughout construction, standard reporting is required at stipulated intervals and after rain events. At the close of the project, the applicant is responsible for submitting a Notice of Termination (NOT).

1.03 Design Guidelines

In order to fully achieve an acceptable level of erosion and sediment control on the construction site, the following design principles shall be fully adhered to during site analysis and development of the erosion and sediment control plan:

- A. Existing site contours should be followed as close as reasonably possible in order to minimize cut and fill.
- B. Existing natural vegetation should remain undisturbed for as long as possible during the construction activities. Naturally vegetated areas along property lines, jurisdictional wetlands, lakes, and watercourses, both natural and man-made, should be left undisturbed during all phases of the site construction. These vegetative filter strips will be required at the discretion of the Town.
- C. A logical sequencing of site construction activities must be provided in order to minimize the size of exposed land areas, and the length of time land areas are left without some form of temporary or permanent soil protection.
- D. Soil stockpiles shall be stabilized utilizing either vegetative establishment, sediment trapping barriers, or erosion control measures such as tarping or mulching, singly or in combination.
- E. Storm sewer inlets which are made operable either before or during the construction phase of development shall be provided with protection from siltation.
- F. Stable, properly maintained construction traffic access routes and stream crossings shall be identified on the site erosion and sediment control plan as needed. These construction access routes shall be installed as part of the site perimeter sediment control barriers, prior to the initiation of on-site land alteration activities. Where sediment is transported onto public streets or

road surfaces, these streets or roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed by either scraping, shoveling or sweeping and be transported to a controlled fill area. Street washing will be allowed only if wash water flows to a controlled sediment trapping area.

- G. Runoff velocities shall be kept as low as possible.
- H. A thorough maintenance and follow-up program, and identification of the person(s) responsible for its implementation will be required.

1.04 ECDA Handbook

The latest edition of the Indiana Handbook for Erosion Control in Developing Areas (HECDA) shall be used for detailed technical guidance for all erosion and sediment control practices. The following general practice guidance applies to the development of all control plans:

- A. Perimeter Control - Perimeter control measures shall be installed as specified on the approved plan, including: construction access drives, straw bale dams and fabric fencing, temporary sediment traps, sediment basins, and diversions.
- B. Vegetative Control - Disturbed areas which are at finish grade shall be permanent seeded within seven (7) days. At the discretion of the Town; barren areas to be rough graded and left undisturbed for more than thirty (30) days shall be established with temporary vegetation; and dormant seeding will be required during seasonal periods (October through February) for those barren areas to be left undisturbed for one hundred and twenty (120) days or longer.
- C. Slope Protection - Slope protection shall be provided by use of temporary and permanent diversion levees, vegetative cover, and slope drains. Concentrated stormwater flows shall not be allowed to flow down cut or fill slopes without proper slope stabilization.
- D. Sediment Trapping - To achieve the goal of preventing sediment from leaving the construction site, the Town will require the use of sediment barriers such as fabric fencing, straw bale dams, and sediment basins.
- E. Protection of Outlet Channel - Concentrated stormwater runoff leaving a development site shall be outletted to an open channel, storm sewer pipe or culvert which is capable of receiving this discharge. Runoff velocities shall be controlled during all storm events so that the peak runoff velocity during and after the

completion of the land alteration approximates existing conditions.

The designer should rely on the Indiana Handbook for Erosion Control in Developing Areas (HECDA) for detailed design, construction and maintenance criteria for all erosion control practices. Such criteria shall be required by the Town unless waived in writing. The manual can be obtained from:

Urban Conservation Program
Division of Soil Conservation
Indiana Department of Natural Resources
402 West Washington Street, Rm. W-265
Indianapolis, Indiana 46204-27

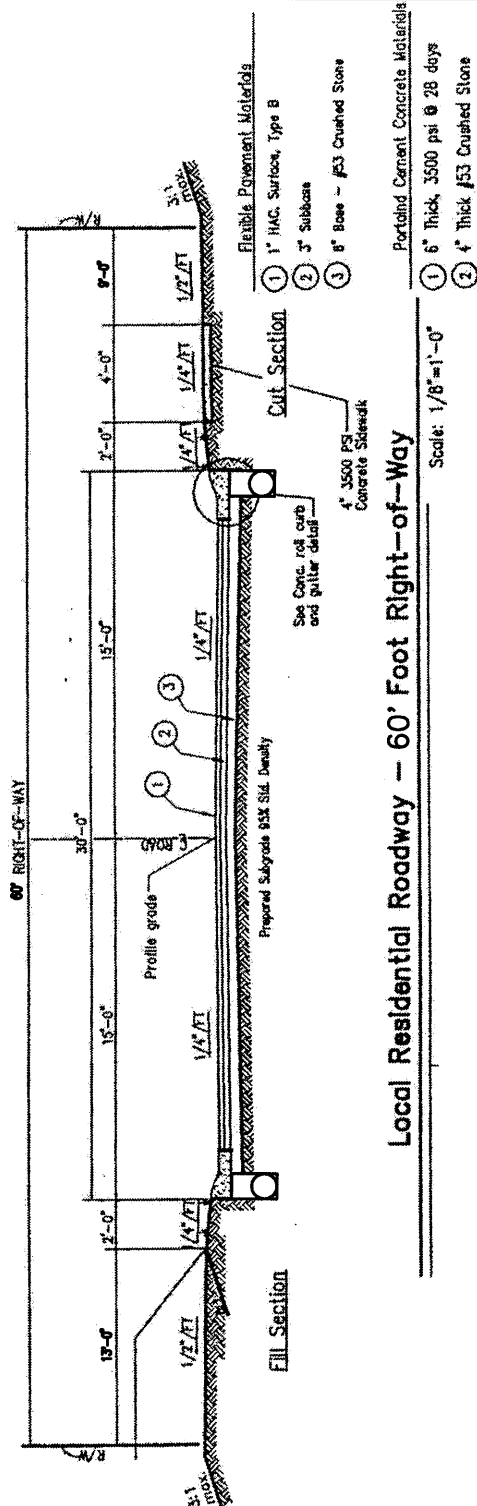
The principles and practices provided by the State in Rule 5 are to be followed in the development of all control plans. Rule 5 does not give specific requirements for use of various practices leaving that to the localities. Individual practices can be modified or waived upon request to the Town based on special site characteristics and conditions.

END OF SECTION

SECTION 8

STANDARD DRAWINGS

- NOTE:
- ① 4 foot wide sidewalks shall be required on both sides of the roadway unless a formal request for waiver is granted by the Newburgh Plan Commission
 - ② The developer shall submit roadway composition tests to the Town Engineer prior to placement of aggregate and/or pavement.



LOCAL RESIDENTIAL ROADWAY SECTION

NO.	REVISION	DATE

TOWN of NEWBURGH, INDIANA

APPROVED _____ DATE _____

APPROVED _____ DATE _____

APPROVED _____ DATE _____

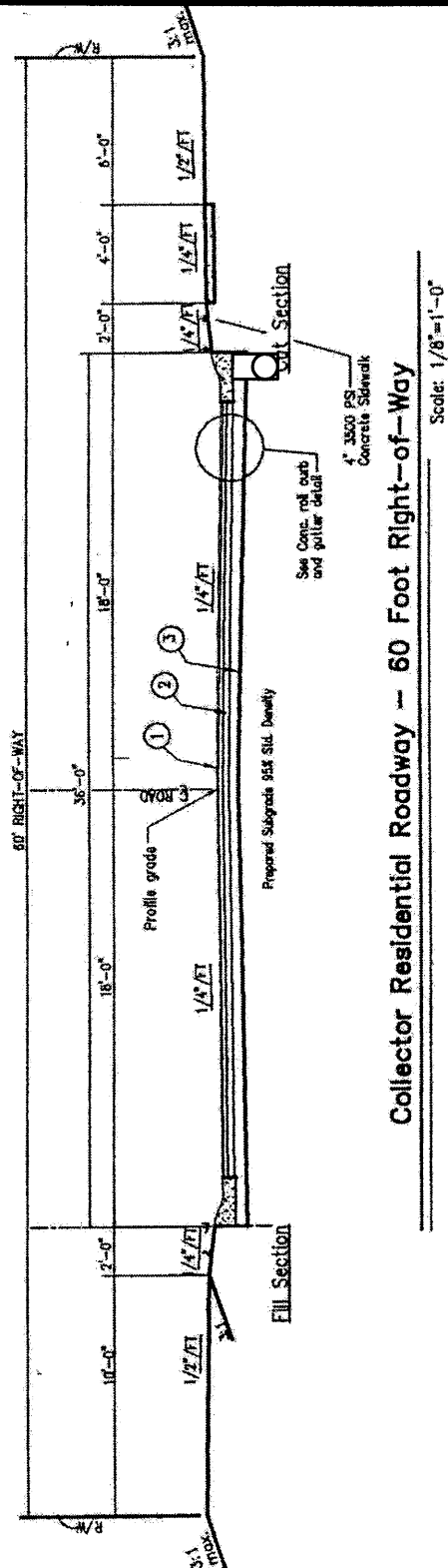
FIGURE

8-2

[illegible]

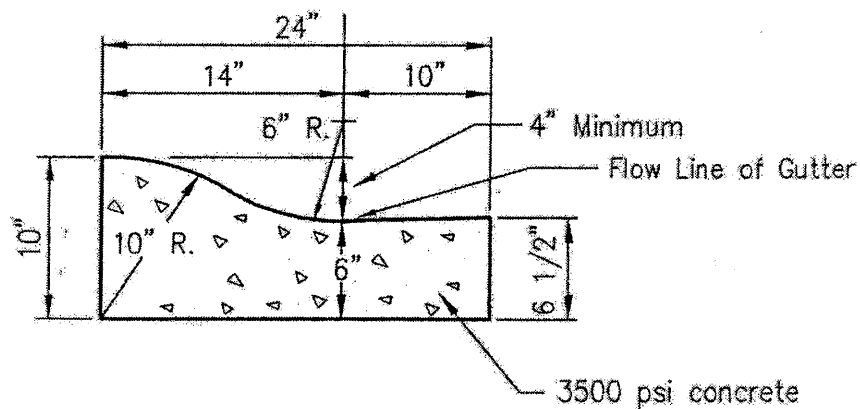
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8-3



Collector Residential Roadway -- 60 Foot Right-of-Way

Scale: 1/8" = 1'-0"



Notes:

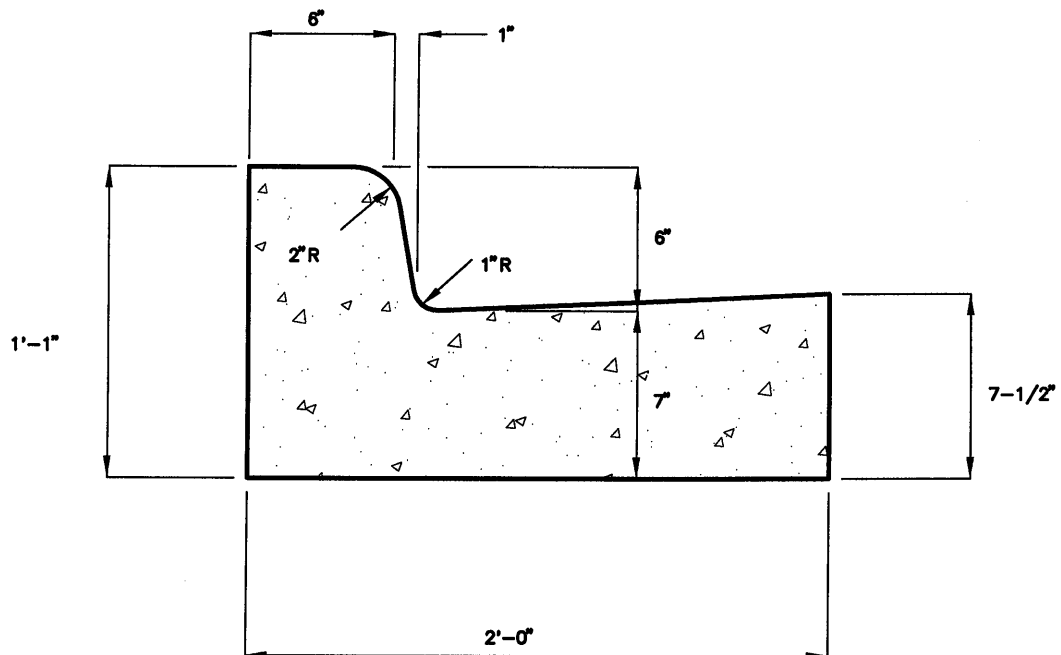
1. 1/2" preformed expansion joint material at all P.C. & P.T. of curb raduis.
2. Tooled contraction joints at 10'-0" centers. Contraction joints to be minimum 2" deep & 1/8" to 1/4" wide.

SECTION

SCALE: 1"=1'-0"

CONCRETE ROLL CURB AND GUTTER

NO.	REVISION	DATE	TOWN of NEWBURGH, INDIANA		FIGURE
			APPROVED _____	DATE _____	8-4
			APPROVED _____	DATE _____	
			APPROVED _____	DATE _____	



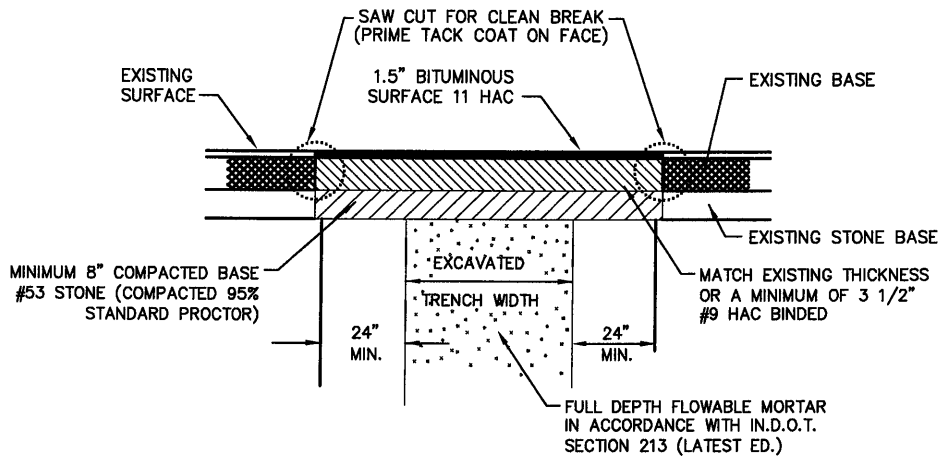
SECTION

SCALE: 1 1/2" = 1'-0"

CONCRETE CURB AND GUTTER

CONCcurb&gutter.DWG

NO.	REVISION	DATE	TOWN of NEWBURGH, INDIANA		FIGURE
			APPROVED	DATE	8-5
			APPROVED	DATE	
			APPROVED	DATE	



SECTION

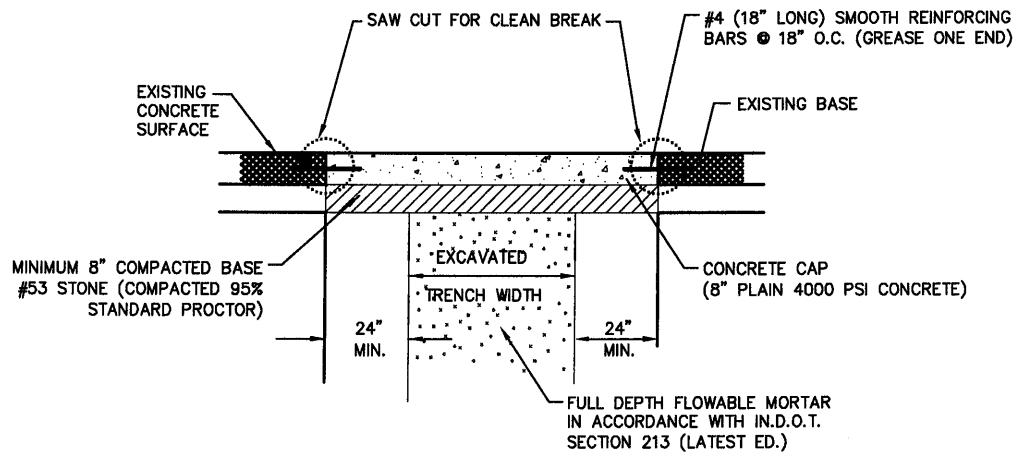
N.T.S.

NOTES:

1. THE EXISTING PAVEMENT SHALL BE SAWCUT TO PROVIDE A CLEAN BREAK.
2. TRENCH SPOIL SHALL BE REMOVED FROM THE WORK SITE AND DISPOSED OF AT AN APPROVED LOCATION.
3. COMPACTED AGGREGATE SHALL BE PLACED AND COMPACTED TO 95% STANDARD PROCTOR.
4. THE EXISTING PAVEMENT SHALL BE TACK COATED PRIOR TO THE LAYING OF NEW ASPHALT. TACK COAT SHALL BE APPLIED AS SPECIFIED IN THE LATEST INDOT SPECIFICATIONS, SECTIONS 409 AND 902.
5. THE BINDER SHALL BE FINISHED 1.5 (ONE AND ONE-HALF) INCHES BELOW THE EXISTING SURFACE.
6. THE ASPHALT SURFACE SHALL CONSIST OF 1.5 (ONE AND ONE-HALF) INCHES OF BITUMINOUS SURFACE, 11 HAC.
7. THE NEW SURFACE SHALL BE SLOPED AT THE SAME RATE AS THE EXISTING SURFACE.
8. A 2 (TWO) INCH WIDE BAND OF CRACK SEALANT SHALL BE APPLIED ALONG THE JOINT BETWEEN THE EXISTING AND THE NEW ASPHALT SURFACES. SEALANT SHALL BE APPLIED IN ACCORDANCE WITH INDOT SPECIFICATIONS, SECTION 305.
9. ANY STRIPING OR ROADWAY MARKINGS REMOVED BY OPEN CUT TRENCHING OPERATIONS SHALL BE PROPERLY RESTORED USING SIMILAR COATINGS OR ADHESIVE MARKINGS.

ASPHALT PAVEMENT REPAIR DETAIL

NO.	REVISION	DATE	TOWN of NEWBURGH, INDIANA		FIGURE
					8-6
			APPROVED	DATE	
			APPROVED	DATE	
			APPROVED	DATE	



SECTION

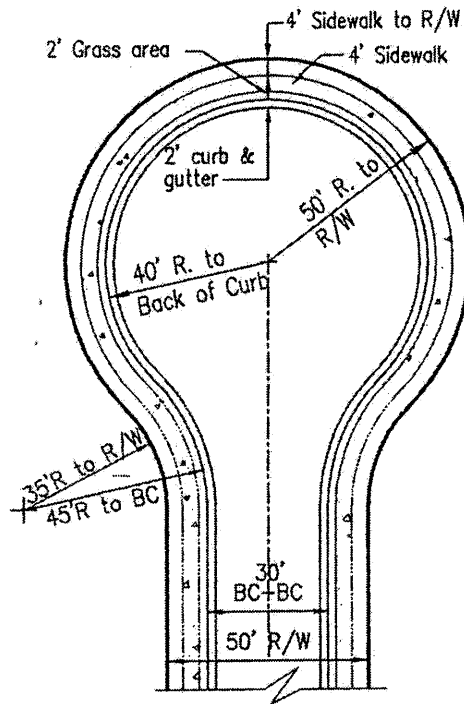
N.T.S.

NOTES:

1. THE EXISTING PAVEMENT SHALL BE SAWCUT TO PROVIDE A CLEAN BREAK.
2. TRENCH SPOIL SHALL BE REMOVED FROM THE WORK SITE AND DISPOSED OF AT AN APPROVED LOCATION.
3. COMPACTED AGGREGATE SHALL BE PLACED AND COMPACTED TO 95% STANDARD PROCTOR.
4. THE CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI.
5. THE NEW SURFACE SHALL BE SLOPED AT THE SAME RATE AS THE EXISTING SURFACE.
6. A 1 (ONE) INCH WIDE BAND OF CRACK SEALANT SHALL BE APPLIED ALONG THE JOINT BETWEEN THE EXISTING AND THE NEW CONCRETE SURFACES. SEALANT SHALL BE APPLIED IN ACCORDANCE WITH INDOT SPECIFICATIONS.
7. ANY STRIPING OR ROADWAY MARKINGS REMOVED BY OPEN CUT TRENCHING OPERATIONS SHALL BE PROPERLY RESTORED USING SIMILAR COATINGS OR ADHESIVE MARKINGS.

CONCRETE PAVEMENT REPAIR DETAIL

NO.	REVISION	DATE	TOWN of NEWBURGH, INDIANA		FIGURE
					8-7
			APPROVED _____	DATE _____	
			APPROVED _____	DATE _____	
			APPROVED _____	DATE _____	



LOCAL ROAD CUL-DE-SAC

N.T.S.

CUL-DE-SAC PLAN

NO.	REVISION	DATE

TOWN of NEWBURGH, INDIANA

APPROVED _____ DATE _____

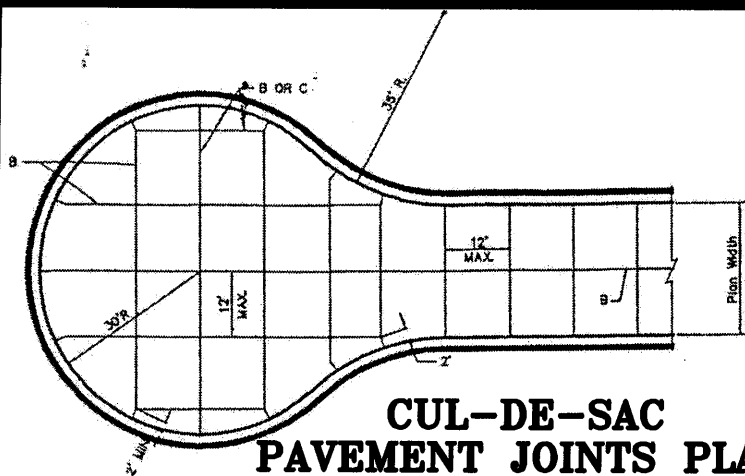
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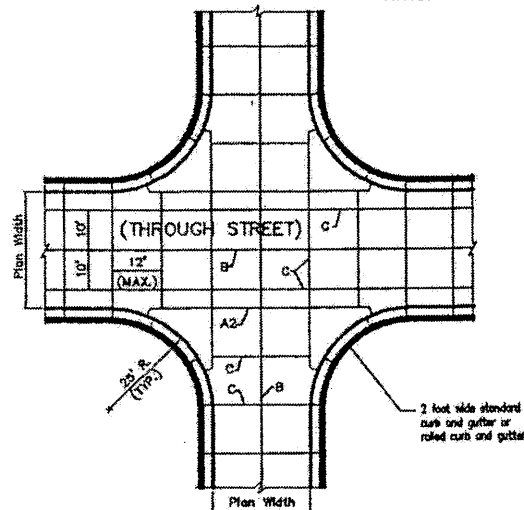
FIGURE

8-8

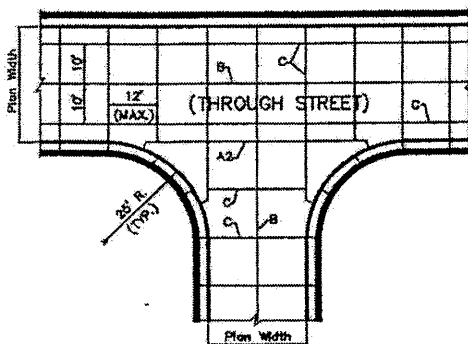
CUL-DE-SAC.DWG



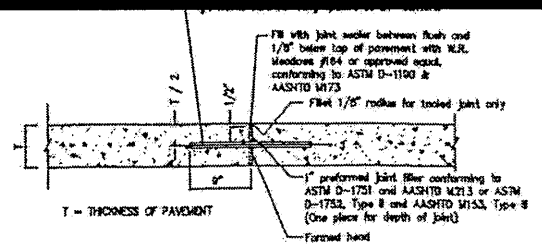
**CUL-DE-SAC
PAVEMENT JOINTS PLAN**
N.T.S.



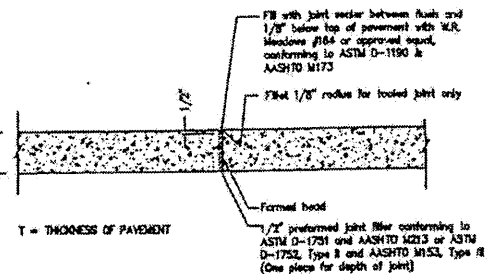
4-WAY INTERSECTION



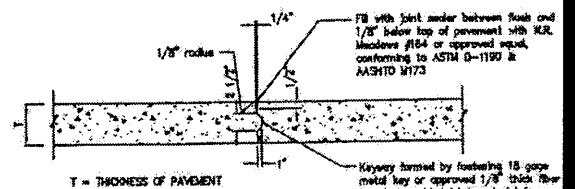
**3-WAY INTERSECTION
PAVEMENT JOINTS PLAN**
N.T.S.



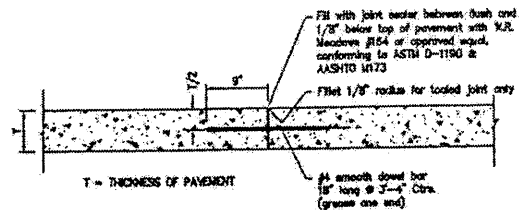
Tied Transverse Expansion Joint
(Type A1 - AT END OF DAYS POUR)
No Scale



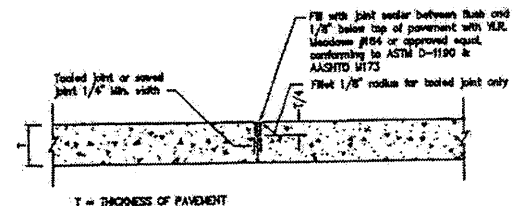
Transverse Expansion Joint
(Type A2 - AT ALL INTERSECTIONS)
No Scale



Longitudinal Construction Joint
(Type B1)
Note: Joint spacing not to exceed 12'-0"



Longitudinal Construction Joint
(Type B2)
No Scale



Longitudinal and Transverse Contraction Joint
(Type C)
No Scale

CONCRETE PAVEMENT JOINT DETAILS

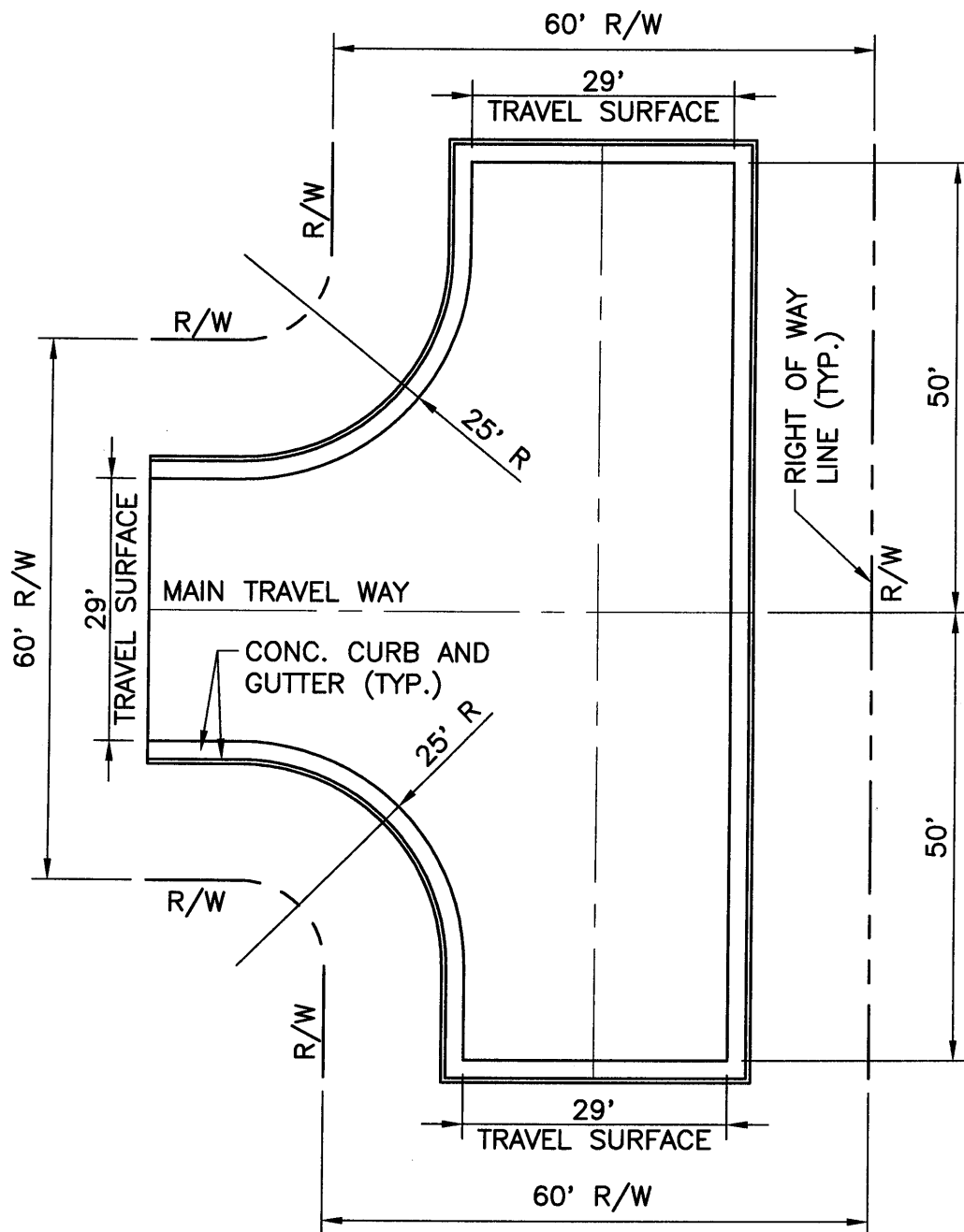
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TOWN of NEWBURGH, INDIANA

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FIGURE

8-9



HAMMERHEAD TURNAROUND

NO.	REVISION	DATE

TOWN of NEWBURGH, INDIANA

APPROVED _____ DATE _____

APPROVED _____ DATE _____

APPROVED _____ DATE _____

FIGURE

8-10

SECTION 9

APPENDIX

RIGHT-OF-WAY ENCROACHMENT AND STREET CUT PERMIT SPECIFICATIONS

GENERAL

The specifications found herein are to be adhered to by any persons performing construction activities within a public right-of-way within the corporate limits for the Town of Newburgh. Acknowledgement of the requirements found in these specifications is assumed upon signing the permit for construction activities for RIGHT-OF-WAY ENCROACHMENT AND STREET CUTS.

The following standards, in addition to the Newburgh Standards, shall be applicable to the right of way.

- A. Construction materials used to repair a right of way shall conform, where applicable, to INDOT standard specifications or the Towns' standards, whichever is selected by the Town engineer.
- B. Cuts in a paved road right of way shall be backfilled with flowable mortar before final repaving. Cuts or excavations in the right of way, other than a paved roadway, shall be restored as near as possible to an original condition and topography by backfill with appropriate material which shall be secured to prevent erosion.
- C. Pavement shall be restored to a smooth permanent surface of like kind material including the restoration of any disrupted pavement markings.
- D. Temporary patching shall be done immediately after the work is completed and shall not exceed 5 days in duration except when weather conditions make final repairs impossible or impracticable. In such event, final repairs shall be effected as soon as possible after the limiting condition is removed. In the event a temporary patch consist of an aggregate surface, such surface shall be stabilized so as to prevent loose material from constituting a safety hazard.
- E. Filing of a curb, gutter or drainage swale providing drainage to the right of way with material or piping is prohibited except by express permission of the Town Council.
- F. All sod, swales, side ditches, storm drains, shoulders or other right of way improvements disturbed by any work or construction in the right of way shall be repaired or replaced to a condition at least equal to the condition existing before the work or construction began.
- G. Use of a tracked vehicle on a paved Town right of way without the use of adequate protective measures to protect the pavement is prohibited.
- H. Dragging, dropping or depositing any mud or soil from a construction site onto a paved right of way is prohibited. Cleaning of a paved Town right of way such material shall occur immediately after such material exists on the roadway.
- I. Erosion of soil or deposit of any material into a drainage system from any construction site or equipment is prohibited.

- J. Installation of sprinkler systems in the right of way is prohibited unless expressly approved by the Town council.
- K. Maintenance of drive way culverts remains the responsibility of the property owner and no drive way culvert shall be constructed or maintained in any fashion which causes the loss of the use of a right of way for its dedicated purpose.

REMOVAL AND REPLACEMENT OF EXISTING FACILITIES

CONCRETE SIDEWALKS – Where concrete sidewalks are cut or disturbed during the construction work, they shall be replaced in fully as good or better condition than that which existed prior to the contractor's operation.

In general, concrete sidewalk shall be tunneled under when encountered in trenching for pipe. When concrete sidewalks are tunneled under, they shall be backfilled with flowable mortar.

When replacing concrete sidewalks, the existing concrete edges shall be trimmed straight at the nearest joint not less than 6-inches back from trench sides. If joints exist in the walk, the pavement shall be removed from joint to joint. The existing edges shall be cleaned and kept moist during pouring to insure a good bond with new concrete.

Longitudinal cuts for trenching along the side of an existing sidewalk will not be acceptable. The entire section of concrete sidewalk, from tooled joint to tooled joint, shall be removed in the area of the trench operations.

The trench shall be backfilled with full depth granular material mechanically compacted to 90% Standard Proctor.

After the trench has been backfilled, a base course of 4-inch thick granular material shall be placed and tamped. Immediately prior to pouring the concrete, the granular material base shall be thoroughly wetted, or the concrete shall be poured on a layer of heavy building paper.

If the utility trench is **located within 5 feet** of a public roadway, the trench shall be compacted to 90% Standard Proctor using granular backfill. Flowable mortar may be used as an alternate.

The sidewalk shall consist of 4-inches of 3500 psi concrete struck off to accurately placed screeds and worked with a wooden float until the mortar appears on the top. After the surface has been thoroughly floated, it shall be brushed to leave markings of a uniform type similar to the existing walk. All joints and edges shall be finished with an edging tool. Tooled joints shall be placed at intervals equal to the width of the walk or 10 feet, whichever is the lesser. The allowable variation shall be 1/8 inch to 10 feet transversely and longitudinally.

CONCRETE PAVEMENT – Where Portland Cement concrete streets and driveways are removed, they shall be reconstructed to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than existed prior to the operation. Disturbed concrete pavement shall be repaired within five working days following the completion of work (weather permitting).

The existing concrete paving shall be sawed or cut to straight edges 24 inches outside the edges of the trench or broken out to an existing joint. The top of the bank wall of the trench shall be no closer than 24-inches from the cut line or joint of the pavement.

Longitudinal pavement cuts shall be made at least 24 inches from the top of the bank of the trench. A minimum of 2 ½ feet of pavement shall be removed for any longitudinal cut.

Backfilling of trenches in pavement areas shall be accomplished using flowable mortar. A base course of 8-inch thick #53 stone shall be placed and mechanically tamped to 95% Standard Proctor between the top of the flowable mortar and bottom of the concrete slab. (Material specification and construction requirements shall be in accordance with INDOT standard specifications, Section 213-Flowable Mortar).

The pavement shall consist of a minimum of 7-inches of 4000 psi concrete. It shall be placed, worked and finished according to the requirements of INDOT standard specifications.

BITUMINOUS PAVEMENT – The contractor shall replace those sections of existing highways, streets and driveways, which have been removed during construction. He shall reconstruct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to his operation. Disturbed pavement shall be repaired within two working days following the completion of work (weather permitting).

Prior to trenching, the pavement shall be scored or cut to straight edges at least 12-inches outside each edge of proposed trench to avoid unnecessary damage to the remainder of the paving. Edges of the existing pavement shall be re-cut and trimmed to square, straight edges after the utility has been installed and prior to placing the new base and pavement: The final sawcut line shall be no closer than 24-inches to the top of the bank wall.

Backfilling of trenches in pavement areas shall be accomplished using flowable mortar. A base course of 8-inch thick #53 stone shall be placed and mechanically tamped to 95% Standard Proctor between the top of the flowable mortar and the bottom of the asphalt binder. (Material specification and construction requirements shall be in accordance with INDOT standard specifications, Section 213– Flowable Mortar).

Prior to placing the asphalt, the cut edges of the existing pavement shall be tack coated uniformly at a rate of .08 gal/square yard. Allow the surface to dry until the material is at a condition of tackiness.

The thickness of the base surface shall be equal to the total thickness of the pavement minus 1.5 inches. The thickness of the H.A.C. #5 base shall not be less than 4-inches.

The wearing surface of the streets and driveways shall be plant-mix bituminous concrete, H.A.C. #11 surface. The thickness of the surface shall not exceed 1½-inches.

Commercial drive cuts shall follow the same repair specifications described for roadways.

Residential asphalt driveway repairs shall follow the same backfill requirements as described above. The minimum pavement thickness shall be 2-inches of H.A.C. #11.

SEEDING AND SODDING – Shall be accomplished as described hereinafter. Unless otherwise specified by the Engineer, all graded areas shall be left smooth and thickly sown with a mixture of grasses at a rate of not less than 87 pounds per acre. Unless otherwise specified the mixture shall consist of 60% Ky. Fescue #31 and 40% perennial rye. When the final grading has been completed, the entire area to be seeded shall be fertilized with number 12-12-12 fertilizer at a rate of 1000 lbs. per acre. Agricultural limestone shall be added at a rate of 4.4 tons per acre or as specified by the Engineer. After the fertilizer and agricultural limestone has been distributed, the contractor shall disc or harrow the ground to thoroughly work the fertilizer into the soil.

The seed shall then be broadcast either by hand or by approved sowing equipment at the rate specified. After the seed has been distributed, the contractor shall then lightly cover the seed by use of a drag or other approved device. All seed shall be certified. The seeded area shall then be covered with straw to a depth of approximately 1½ inches. Any necessary reseeding or repairing shall be accomplished by the contractor.

When sodding is required for erosion control purposes, it shall be at least 60 per cent of pernicious weeds, and shall be so laid that no voids occur between strips. Weed roots shall be removed as the sod is laid, and the finished surface shall be true to grade even and equally firm at all points. Well screened topsoil shall be lightly sprinkled over the sodded areas and shall be raked to insure sealing the sod joints. The sodded areas shall be thoroughly watered.

Embankments over 3:1 slope disturbed during trenching operations shall be restored using an erosion control blanket or sod. The blanket shall be constructed of synthetic woven mesh with biodegradable mulch interwoven into the synthetic mesh. The area shall be prepared for acceptance of vegetation as described above.

REPLACEMENT OF EXISTING MAIL BOXES, CULVERTS, FENCES, WALLS AND OTHER SUCH FACILITIES - Existing mail boxes, drainage culverts, lampposts, fences, walls, curbs and the like shall not be molested or disturbed unless reasonably possible. Existing materials shall be reused in replacing such facilities when materials have not been damaged to be replaced with new materials of the same type of the contractor's expense.

General Guide on Trip End Generation Rates by Land Use

Type of Land Use	Type of Development	No. of Studies	Weekday Trip End Generation Rates	
			Average*	Range
RESIDENTIAL	Subdivision	21	9.5 TE per Occupied Dwelling Unit	6.4-12.7
	Apartment	17	5.7 TE per Occupied Dwelling Unit	3.1-7.9
	Condominium	21	5.1 TE per Occupied Dwelling Unit	3.1-12.2
	Mobile Home Park	17	5.4 TE per Occupied Dwelling Unit	2.8-6.8
	Retirement Community	5	3.3 TE per Occupied Dwelling Unit	2.9-4.9
MAJOR INSTITUTION	College (4 yrs.)	5	2.2 TE per Student	1.9-3.3
	College (2 yrs.)	4	1.3 TE per Student	1.1-1.6
	High School	5	1.3 TE per Student	1.1-2.1
	Elementary School	9	1.0 TE per Student	0.7-1.2
	Hospital	8	9.4 TE per Bed	4.5-14.9
	Library	4	58.4 TE per Employee	37-82
	Government Office Building	11	64.6 TE per 1000 Sq. Ft. floor area	25-272
	Shopping Center (Regional)	4	315 TE per Net Acre	149-671
	Shopping Center (Neighborhood)	3	949 TE per Net Acre	800-1064
COMMERCIAL	Commercial Store (free-standing)	6	48 TE per 1000 Sq. Ft. floor area	35-330
	Commercial Office Building	10	10 TE per 1000 Sq. Ft. floor area	8.8-23.6
	Furniture Store	8	6.3 TE per 1000 Sq. Ft. floor area	3.7-12.5
	Lumber/Home Improvement	6	30.6 TE per 1000 Sq. Ft. floor area	21.1-68.9
	Medical Office	4	41 TE per Doctor	31-53
	Motel	10	10.1 TE per Occupied Unit	4.7-14.6
	Restaruant (Quality)	15	14.1 TE per Employee	9-28
	Coffee Shop	2	29 TE per Employee	22-37
	Bank, Savings and Loan	6	43 TE per Employee	31-76
	Service Station	2	57 TE per Employee	41-79
	Nurseries	12	22.2 TE per Employee	10.7-53.9

Source: Institute of Traffic Engineering



NOTICE OF INTENT (NOI) STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY

State Form 47487 (R6 / 9-04)

Approved by State Board of Accounts 2004

Indiana Department of Environmental Management
Drinking Water Branch

Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity. Permitted project site owners are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

Check the type of Submittal: ☐ Initial ☐ Amendment ☐ Renewal

(Permit Number below required for Renewals and Amendments Only - Not required for Initial Submittal)

Project Name and Location:

Project Permit # _____ Project Name: _____ County: _____

Brief Description of Project Location: _____

Latitude Deg. ____ / Min. ____ / Sec. ____ and Quarter _____ Section _____

Longitude Deg. ____ / Min. ____ / Sec. ____ Township _____ Range _____

Does ☐ all or ☐ part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) ☐ Yes ☐ No If yes, please name the MS4(s): _____

Project Site Owner and Project Contact Information:

Company Name (If Applicable): _____

Project Site Owner's Name (An Individual): _____ Title/Position: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ E-Mail Address (If Available): _____

Ownership Status (check one): Governmental Agency: ☐ Federal ☐ State ☐ Local

Non-Governmental: ☐ Public ☐ Private ☐ Other (Explain): _____

Contact Person: _____ Affiliation with Project Site Owner: _____

Company Name: _____

Address (if different from above): _____

City: _____ State: _____ Zip: _____

Phone: _____ E-Mail Address (If Available): _____

Project Description:

☐ Residential-Single Family ☐ Residential-Multi-Family ☐ Commercial ☐ Industrial ☐ Other _____

Discharge Information:

Name of Receiving Water: _____

(If applicable, name of municipal operator of storm sewer. Please note that even if a retention pond is present on the property, the name of the nearest possible receiving water is required).

Project Acreage:

Total Acreage: _____ Acres Proposed Acreage to be Disturbed: _____ Acres

Total Impervious Surface Area (Estimated for Completed Project): _____ Square Feet
(as defined in 327 IAC 15-5-4(16) including structures, roads, parking lots, and other similar improvements)

Timetable:

Start Date: _____ and Estimated End Date for all Land Disturbing Activity: _____

NOTE: Within forty-eight hours of the initiation of construction activity, the project site owner must notify the appropriate plan reviewing agency of the actual project start date.

(Continued on Reverse Side)

Construction Plan Certification:

By signing this Notice of Intent letter, I certify the following:

- A. The storm water quality measures included in the construction plan comply with the requirements of 327 IAC 15-5-6.5, 327 IAC 15-5-7, and 327 IAC 15-5-7.5;
- B. the storm water pollution prevention plan complies with all applicable federal, state, and local storm water requirements;
- C. the measures required by 327 IAC 15-5-7 and 327 IAC 15-5-7.5 will be implemented in accordance with the storm water pollution prevention plan;
- D. if the projected land disturbance is one (1) acre or more, the applicable Soil and Water Conservation District or other entity designated by the Department, has been sent a copy of the construction plan for review;
- E. storm water quality measures beyond those specified in the storm water pollution prevention plan will be implemented during the life of the permit if necessary to comply with 327 IAC 15-5-7; and
- F. implementation of storm water quality measures will be inspected by trained individuals.

In addition to this form, I have enclosed the Following:

- ☐ Verification by the reviewing agency of acceptance of the construction plan.
- ☐ Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity is to commence, including all required elements contained in 327 IAC 15-5-5 (9).
- ☐ \$100 check or money order payable to the Indiana Department of Environmental Management. If the project lies solely within the permitted jurisdiction of an MS4 and is regulated by the MS4 under 327 IAC 15-13 – a fee is not required with submittal of this Notice of Intent

A permit issued under 327 IAC 15-5 is granted by the commissioner for a period of five (5) years from the date coverage commences. Once the five (5) year permit term duration is reached, a general permit issued under this rule will be considered expired, and, as necessary for construction activity continuation, a new Notice of Intent letter would need to be submitted ninety (90) days prior to the termination of coverage.

Project Site Owner Responsibility Statement:

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name of Project Owner _____

Signature of Project Owner _____ Date: _____

This Notice of Intent must be signed by an individual meeting the signatory requirements in 327 IAC 15-4-3(g) and submitted in accordance with 327 IAC 15-5-6.

**Mail this form to: Indiana Department of Environmental Management
Urban Wet Weather Section
Cashiers Office Attn: OWQ Rule 5
100 North Senate Avenue
Indianapolis, IN 46204**

327 IAC 15-5-6 (a) also requires a copy of the completed Notice of Intent letter be submitted to the local Soil and Water Conservation District or other entity designated by the Department, where the land disturbing activity is to occur.

Questions regarding the development of the Construction Plan and/or field implementation of 327 IAC 15-5 may be directed to your local Soil and Water Conservation District office or the Department of Natural Resources at 317-233-3870. Questions regarding the Notice of Intent may be directed to the Rule 5 contact person at 317/233-1864 or 800/451-6027 ext 31864.

PUBLIC NOTICE

"In compliance with 327 IAC 15-5 (Rule 5), notice is hereby given that construction of {Project Name} located in _____ Township, _____ County, Indiana is scheduled to commence on {month/day/year} and construction should be completed on {month/year}. The project is located in {address of the location of the project}. Run-off from the project site will discharge to {stream(s) receiving the discharge(s)}. Questions or comments should be directed to {contact person's or owner's name and address or phone number}."